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Regulation No. 16 (Safety-belts)

Proposal for Supplement 6 to the 06 series of amendments to Regulation No. 16 (Safety-belts)

Submitted by the expert from the European Association of Automotive Suppliers *

The text reproduced below was prepared by the expert from the European Association of Automotive Suppliers (CLEPA) aimed at clarifying the provisions for dynamic testing of the rear seat system and on advanced restraint system approval. This text is based on an informal document GRSP-56-10 distributed during the fifty-sixth session of the Working Party on Passive Safety (GRSP). The modifications to the current text of UN Regulation No. 16 are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2012–2016 (ECE/TRANS/224, para. 94 and ECE/TRANS/2012/12, programme activity 02.4), the World Forum will develop, harmonize and update Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

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I. Proposal

Paragraph 2.8, amend to read:

"2.8. *"Airbag assembly"* means a device … of the passenger compartment. **Any such deployed structure shall not be considered as rigid part."**

Paragraph 6.4.1.3.3., amend to read:

"6.4.1.3.3. In the case of a safety-belt intended to be used in ~~an outboard front~~ **a** seating position protected by an airbag ..."

Paragraph 6.4.1.4.1., amend to read:

"6.4.1.4.1. The movement of the chest reference … in the dynamic test would have come into contact with any forward rigid part of the vehicle. ~~other than the chest with the steering assembly, if the latter meets the requirements of Regulation No. 12 and provided contact does not occur at a speed higher than 24 km/h. For this assessment the seat shall be considered to be in the position specified in paragraph 7.7.1.5. below.~~"

Insert new paragraphs 6.4.1.4.1.1. and 6.4.1.4.1.2., to read:

"6.4.1.4.1.1. In the case of the driver, contact of the chest with the steering assembly would be allowed, if the latter meets the requirements of Regulation No. 12 and provided contact does not occur at a vehicle speed higher than 24 km/h.

For the assessment of the requirements in paragraphs 6.4.1.4.1. and 6.4.1.4.1.1. the seat shall be considered to be in the positions specified in paragraph 7.7.1.5. below.

6.4.1.4.1.2. In the case of any other occupant, contact with any rigid part of the vehicle in front of the dummy would be allowed, if the dummy contact meets the requirements of Regulations Nos. 21 or 17, provided that the contact occurs at a speed lower than 24 km/h and without contact between the manikin's head and its knees.

For the assessment of the requirements in paragraphs 6.4.1.4.1. and 6.4.1.4.1.2. the seat of the tested manikin and if applicable the seat in front of the manikin shall be considered to be in the positions specified in paragraph 7.7.1.6. below."

Paragraph 7.7.1.5., amend to read:

"7.7.1.5. For the assessment of the requirements in paragraph 6.4.1.4.1. **and 6.4.1.4.1.1.** the seat shall be regarded in its most forward driving or travelling position appropriate to the dimensions of the manikin. **In case of the alternative, conventional frontal impact test, of paragraph 7.7.1.1. above, the seat back angle of the tested seat shall be adjusted at 10°, measured with the 3-D machine following the "Procedure for Determining the "H" Point and the actual Torso Angle for Seating Positions in Motor Vehicles" under Annex 4 to Regulation No. 14.**

Insert a new paragraph 7.7.1.6., to read:

"7.7.1.6. For the assessment of the requirements in paragraphs 6.4.1.4.1. and 6.4.1.4.1.2. the seat of an occupant in the front shall be in its most forward driving or travelling position according to the dimensions of the manikin.

In case of an alternative, conventional frontal impact test, of paragraph 7.7.1.1. above, the seat back angle of the tested seat shall be adjusted at 10°, measured with the 3-D machine following the "Procedure for Determining the "H" Point and the actual Torso Angle for Seating Positions in Motor Vehicles" under Annex 4 to Regulation No. 14.

For any testing position of rear seated occupants, the position of the tested seat, if adjustable shall be regarded in its rearmost and lowest position.

Any contour of a seat in front of a tested seating position shall be in the R-Point seating position and with a seat back angle at 10°, as derived from the 3-D H Point machine.

In case the manikin geometry limits the R-Point position, the front seat may be adjusted by an incremental forward movement of the seat unless this option does not exist."

. . .

Paragraphs 7.7.1.6. and 7.7.1.7.(former), renumber as paragraphs 7.7.1.7. and 7.7.1.8.

Paragraph 15.3.3., amend to read:

"15.3.3. Even after the date … continue to accept them, and Contracting Parties may continue to grant extensions of **components and separate technical units** approvals to the **04 or** 05 series of amendments."

Annex 14, paragraph 2.2.3., amend to read:

"2.2.3. Results

Test results shall meet the requirements set out in paragraph 6.4.1.3.1. of this Regulation.

The forward displacement of the manikin may be controlled with regard to paragraph 6.4.1.3.2. of this Regulation (or 6.4.1.4. where applicable) during a test performed with conditioning according to paragraph **1.6.** of this annex by means of a simplified adapted method.

A simplified adapted method could be e.g. the use of a reference chest speed measured at 300 mm forward displacement in a test without an airbag, carried out by the technical service in charge of the conformity of production and to be considered in the control of conformity control plan."

II. Justification

The proposed draft for amending UN Regulation No. 16 is motivated by the following arguments:

1. Alignment of requirement for front and rear seated occupants;

2. Details of the test setup of dynamic testing in case of the belt assembly or of the restraint system;

3. Enable the installation of advanced restraint systems by the certainty of a clear type approval process also for rear seated occupants;

4. Define a minimum technical standard for the limitation of seat belt loads;

5. Clarify the role of inflatable protective structures to be part of the restraint system and no rigid parts. Discussions on this took place with technical services;

6. Indicate on a simplified adapted method to derive a common understanding for all parties involved such as technical services or manufacturers.